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ABSTRACT

This document gives a detailed report of the advancement of an instrument for assessing the elementary school educational environment of young children. Fifty-four public elementary schools (grades K-6) in Massachusetts were randomly selected. Educational environment was assessed in the sampled schools by having 5,412 fifth- and sixth-grade students respond to two forms of the Elementary School Environment Survey (ESES) consisting of 40 statements each concerning conditions and happenings characteristic of elementary schools. Students were asked to respond to each statement in ESES as a true or false description of their elementary schools. These responses were subjected to factor analysis and rotated along oblique axes. Six emerging factors were reviewed by 12 judges and contextually named: alienation, humanism, autonomy, morale, opportunism, and resource. A procedure for assessing environments and ways in which environmental information might be used are suggested. A 14-item bibliography is included. (Related document SP 005 827.) (Author/MJM)

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IDENTIFYING THE DIMENSIONS OF ENVIRONMENTAL

PRESS AT THE ELEMENTARY SCHOOL LEVEL:

A FACTOR ANALYSIS OF BETA PRESS

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ABSTRACT

This investigation identifies compelling dimensions of elementary school educational environment. More than 5,000 students in fifty-four randomly selected elementary schools responded to eighty statements about conditions and happenings existing in their schools as described in the Elementary School Environment Survey (ESES). These responses were subjected to factor analysis and rotated along oblique axes. Six emerging factors were reviewed by twelve judges and contextually named: (1) Alienation (2) Humanism (3) Autonomy (4) Morale (5) Opportunism (6) Resource.

The use of factor analytic procedures to identify and define important dimensions of elementary school educational atmosphere contributes to further significance and usefulness of the Elementary School Environment Survey. Individuals interested in an examination copy of ESES and information about ways the instrument can be used for fostering school renewal can write Robert L. Sinclair or David Sadker at the above addresses.

TABLE OF CONTENTS

I.	Introduction	
	A.	Significance of the Problem 4
	B.	Original Instrument 6
II.	Procedure	
	A.	Selection of Sample 9
	B.	Scoring the Instrument 14
	C.	Methodological Considerations of the Factor Analysis 15
	D.	Naming the Factors 22
	E.	Selection of Factors 23
III.	Findings	
	A.	Dimensions of the Elementary School Environment 24
	B.	Uses of ESES 27

TABLES AND FIGURES

TABLE I	Sampled Schools and Related Populations.....	11
FIGURE I	Eigen Values and Cut Off Points for the Factor Analyses	18
TABLE II	Correlation Matrix of Primary Factors	19
TABLE III	Items Ordered by Factor (Form A)	20
TABLE IV	Items Ordered by Factor (Form B)	21

INTRODUCTION

Significance of the Problem

Researchers and practitioners working in schools and classrooms to foster quality education quickly realize that improvement must be made in the total educational environment provided for learners. Only by altering school conditions which discourage learning and by building and maintaining compelling educational environments that foster learning will it be possible to create equal educational opportunity in which every child's aspirations are checked only by his or her individual limitations. Obviously greater knowledge about ways the environment in schools differ and are common can contribute to discovery of what conditions are most appropriate for certain learners. Yet, it is safe to say that, with a few exceptions, in the last twenty years there have been few contributions to instrumentation for assessment of environments in elementary schools.

It is particularly important for us to gain insight into elementary school climates because during this time of exposure to early environments children are most receptive to change. Bloom, for example, estimates from his results on general achievement, reading comprehension, and vocabulary development that by age nine at least fifty percent of the general learning pattern at age eighteen has been developed, and at least seventy-five percent of the pattern is established by about the age of thirteen.¹ The elementary school years appear to be very crucial in determining educational progress of the later years. And in order to increase our understanding of how varied educational surroundings affect students, we need to discover new and different ways to describe and analyze the diversity of elementary school climates. In fact the

problems that are most alive in educational improvement today are the creation of more meaningful and efficient instruments to understand the school environment in which elementary youth live and learn. The purpose of this paper, then, is to report on the advancement of an instrument for assessing the elementary school educational environment of young children.

Educational environment, as used in this study, includes physical, psychological, social and intellectual stimuli. By environment, we mean the conditions, forces and external stimuli which impinge upon the individual.²

Dewey concurred with this broad definition. He described environment as:

...the particular medium in which an individual exists which leads him to see and feel one thing rather than another...it strengthens some beliefs and weakens others ...it gradually produces in him a certain system of behavior...In brief, the environment consists of those conditions that promote or hinder, stimulate or inhibit, the characteristic of activities of a human being.³

This study determines the character of the school by asking students how they view the environment. Therefore Murray's concept of Beta press is utilized.⁴ According to Murray, Beta press refers to the participant's unique interpretation of the environment. The "objective" perception of an environment by an outside observer is not employed in the present study. It is assumed that individuals do not act on the environment as described by an observer, rather, behavior is determined by their own perception of the environment.

Original Instrument

The Elementary School Environmental Survey (ESES) was adapted for use from Pace's College and University Environment Scales (CUES). Both instruments purport to identify an institution's environment along five factors, which are defined by Pace as follows:⁵

1. Practicality - This combination of items suggests a practical instrumental emphasis in the college environment. Procedures, personal status, and practical benefits are important. Status is gained by knowing the right people, being in the right groups, and doing what is expected. Order and supervision are characteristic of the administration and of the class work. Good fun, school spirit and student leadership in campus social activities are evident.

The atmosphere described by this scale appears to have an interesting mixture of entrepreneurial and bureaucratic features... so that it is not only useful to understand and operate within the system but also to attain status within it by means of personal associations, and political or entrepreneurial activities.

2. Community - The combination of items in this scale describes a friendly, cohesive group oriented campus. The environment is supportive and sympathetic. There is a feeling of group welfare and group loyalty which encompasses the college as a whole. This campus is a community. It has a congenial atmosphere . . .

If the organizational counterpart of "practicality" was bureaucracy, perhaps the counterpart to "community" is the family.

3. Awareness - The items in this scale seem to reflect a concern and emphasis upon three sorts of meaning--personal, poetic and political. An emphasis upon self-understanding, reflectiveness, and identity suggest the search for personal meaning. A wide range of opportunities for creative and appreciative relationships to painting, music, drama, poetry, sculpture, architecture, etc., suggest the search for poetic meaning. A concern about events around the world, the welfare of mankind, and the present and future condition of man suggest the search for political meaning and idealistic commitment . . .

Perhaps in another sense, these features of a college atmosphere can be seen as a push toward expansion and enrichment--of personality, of societal horizons, and of expressiveness.

4. Propriety - The items in this scale suggest an environment that is polite and considerate. Caution and thoughtfulness are evident. Group standards of decorum are important. On the negative side, one can describe propriety as the absence of demonstrative, assertive, rebellious, risk-taking, inconsiderate, convention-flouting behavior.
5. Scholarship - The items in this scale describe an academic scholarly environment. The emphasis is on the competitively high academic achievement and a serious interest in scholarship. The pursuit of knowledge and theories, scientific or philosophical, is carried on rigorously and vigorously. Intellectual speculation, an interest in ideas as ideas, knowledge for its own sake, and intellectual discipline--all these are characteristic of the environment.

These five factors were derived from a factor analysis of the original College Characteristics Index. Pace believes that these five dimensions can be used to describe the nature of the environment of a particular college or university. Underlying this assumption is an emphasis on the collective perceptions of students. This collective consensus, which must include sixty-six percent of the students responding in order to be scored, enables Pace to define an institution's environment along these five factors.

In adapting this instrument for use on the elementary school level, Sinclair made several modifications.⁶ Pace's statements about the institution were rewritten to make them appropriate for elementary school youngsters in both content and reading level. Elementary school principals and teachers served as judges of the revised items. As a result of this screening, fifteen new items were constructed. Generally, these items were opposite or similar to the screened CUES statements, and were directly related to the contextual definitions of the five dimensions of the scale.

This form of ESES consisted of 100 items and was administered to four elementary schools in southern California in a pilot study. As a result of this initial pilot study, statements which did not discriminate effectively or seemed vague to the students were dropped. Further editing and revision also took place and eighty items were retained. Each of the five selected factors contained sixteen questions. This total of eighty items was considered as too many for elementary students to respond effectively within a reasonable length of time. Therefore, the final instrument was divided into two forms, A and B, of forty questions each. On each form, each of the five environmental dimensions were represented by eight questions.

In his investigation, Sinclair attributed two kinds of validity to the ESES instrument: content and construct validity. Sinclair referred to the work accomplished by Pace in relation to these two kinds of validity. The ESES instrument contains the same environmental dimensions and essentially the same statements as those used by Pace. Pace, in analyzing the College and University Environment Scales, found that the substance or content of this instrument is representative of the environment being considered.⁷ In addition, Pace found that the correlations between CUES and other institutional assessment data are supportive of the expected associations.⁸ The conclusion drawn from Pace's work by Sinclair is that much of the content and construct validity supporting CUES is, to a lesser extent, supportive of the Elementary School Environment Survey.

Attempting to determine additional construct validity applicable to ESES, Sinclair encountered the difficulties intrinsic in such exploratory work, i.e., a lack of related environmental data which would permit correlations with the constructs in ESES. However, the Halpin-Croft Organizational Climate Questionnaire was administered⁹ and Pearson product-moment correlations were computed for these scores and the scores from the Elementary School Environment Survey as reported in Sixteen California schools.

The Halpin-Croft measurement dealt with six areas of the organizational climate of the schools. The Controlled climate is described as work oriented and impersonal, and correlated negatively with the Practicality and Community scales. The Familiar climate is personal and non-work oriented. This climate was positively related to Practicality and Community. The Paternal climate may be defined as undemocratic with a strong authority figure. This climate correlated positively with Community. The remaining scales on both instruments did not correlate at the .05 level of significance, but did tend to suggest the expected relationships.

PROCEDURE

Selection of the Sample

The study was dependent upon obtaining an adequate sample for an effective factor analysis. As a result of this need, it was decided to obtain a large random sample of all elementary schools within the commonwealth. This universe of potential participants included inner city, suburban, and rural elementary schools.

The diversity of grades within elementary schools of different communities suggested the need for a definition of an elementary school. For the purposes of this study, an elementary school is defined as a school commencing at the preschool or first grade level and continuing to either a fifth or sixth grade level. As a result, schools commencing at second grade or higher were considered distinct enough not to be included in this sample.

Each city and town in the state was assigned a three digit number. The assignment was conducted with the use of a computer, the first town in alphabetical order being assigned 001, the second town 002, and so on. In like manner, each elementary school was assigned a three digit number. As a result, 1,196 elementary schools were allotted a six digit identification number.

In selecting the specific schools, a table of random numbers constructed by the Rand Corporation was used.¹⁰ Various individuals from the Massachusetts Department of Education were asked to select numbers from this table with the use of a pointer. A sample approximating four and one-half percent of the total 1,196 schools was selected. This represents a significant size for the purposes of this study. All but two of the schools agreed to participate in the study, and these two schools were replaced by repeating the sampling procedures. The final sample used in the investigation included fifty-four schools of varying demographic characteristics. In these schools, a total of 5,412 students were asked to respond to the questionnaire.

The students responding to the questionnaire were all the fifth and sixth graders who had been in the school for at least one year. The size of each school and related population figures are reported in Table 1.

TABLE 1
Sampled Schools and Related Populations

School	Grades	School Population	District Student Population	Town or City Population	Number of Respondents
005 030	1-6	384	4,653	15,718	118
009 003	K-6	435	5,529	15,878	125
010 005	K-6	393	9,197	49,953	91
010 030	K-6	558	"	"	134
016 020	1-6	496	6,959	27,118	182
017 030	1-5	123	3,782	14,047	25
027 005	1-5	228	378	1,609	39
035 062	K-8	416	94,833	697,197	50
035 108	K-6	348	"	"	101
035 122	K-5	489	"	"	25
035 166	K-6	882	"	"	159
035 229	K-8	775	"	"	85
035 304	K-6	332	"	"	72
045 005	1-6	279	279	1,751	32
049 075	K-8	412	10,555	98,958	63
057 010	K-6	508	4,836	36,826	182
068 005	K-6	131	131	1,426	32
073 005	1-6	302	5,671	23,869	87
093 011	K-5	353	7,585	43,544	37
095 125	K-6	390	12,426	99,942	99
100 025	1-6	501	13,143	43,544	261

TABLE 1 (continued)

School	Grades	School Population	District Student Population	Town or City Population	Number of Respondents
100 039	1-6	622	13,143	43,544	176
114 040	K-6	196	3,753	17,690	56
134 010	1-5	476	2,169	10,117	109
137 020	K-8	418	8,818	52,689	106
141 025	1-6	208	3,340	9,666	61
149 030	1-8	307	8,491	70,933	145
156 005	K-6	74	74	2,320	23
160 005	K-7	679	15,824	92,107	181
160 020	K-5	428	"	"	63
161 023	1-6	516	4,006	13,805	164
163 075	1-6	230	14,955	94,478	252
165 010	K-6	549	9,937	57,676	127
178 010	K-8	947	9,690	29,619	60
198 020	K-6	408	8,485	28,831	109
199 045	K-6	527	7,484	25,793	121
201 130	K-6	213	15,702	102,477	98
207 025	K-6	512	18,099	92,384	143
210 025	K-6	327	4,692	30,058	104
210 029	K-6	376	"	"	120
229 040	1-6	264	9,643	32,202	81
236 095	K-6	409	11,952	57,879	86
243 075	K-6	438	16,667	87,409	110
243 090	K-6	874	"	"	202

TABLE 1 (continued)

School	Grades	School Population	District Student Population	Town or City Population	Number of Respondents
246 025	1-6	541	5,172	19,259	156
252 015	K-6	224	992	4,616	45
258 030	K-8	682	6,102	39,211	154
281 040	K-6	329	31,425	174,463	64
281 175	K-6	403	"	"	108
305 045	1-6	220	5,675	24,295	89
305 060	1-6	169	"	"	56
336 020	1-6	330	12,838	48,177	80
348 220	K-6	290	29,928	186,587	67
630 010	K-6	185	697	1,426	64

Scoring of the Instrument

The scoring procedure used by Pace and Sinclair is of a public opinion survey type. Individual responses take on importance in their relation to a consensus. When sixty-six percent or more of the students, answered a question in the keyed direction, that response is added to the institution's environmental score. In this manner, the more items answered in the keyed direction, by sixty-six percent or more of the students, the higher the environmental score.

In a modification of this method, Pace and Sinclair favor what is termed the "66 plus and 33 minus" method. This procedure is somewhat more sophisticated and exacting for it accounts for consensus responses which would lower an institution's environmental standing. For example, when using the first scoring technique a school which has sixty-six percent or more students answering five to eight questions in a strong community direction would, under the "66 plus" method receive a score of five. This would be true even if the remaining three questions were answered in a negative or anti-community direction. Under the "66 plus 33 minus" method, if the three negative responses were sixty-six percent or more on an item they would be counted in the final score. In this way the final score would not be five, but five minus three or two. These raw scores were converted to percentile scores. This enabled the investigator to graphically present the school scores along the five environmental dimensions.

However, for the purposes of this study, neither of the two consensus methods described will suffice. Either of the consensus techniques, if applied to individual item scoring, places unclear and unnecessary

reporting between the investigator and the data. In addition, the consensus techniques provide only limited variance of an item. Using this method, an item could potentially be assigned a score of +1, 0, or -1. The percentage technique, however, increases the item variance along a spectrum of 9 to 100. This more discriminatory scoring procedure adds strength and clarity to the statistical techniques involved in factor analysis. Thus the results of the factor analysis become clearer and more meaningful using this percentage technique.

The percentage scoring technique was used for each item, and these scores were recorded on IBM cards. The cards were divided into two groups for the two forms of ESES: Form A and Form B. In each group, each school was scored across the forty variables.

Methodological Considerations of the Factor Analysis

Each form of the school analysis was considered as distinct and was treated as a separate analysis. Form A was administered to all the fifty-four schools selected in the random sample. Form B, through administrative omission, drew responses in only fifty-two of the fifty-four schools. One analysis was conducted with an N of fifty-two (Form B) and the second with an N of fifty-four (Form A).

One consideration of these analyses is the fact that the number of cases approaches the number of variables. With forty questions on each analysis, and an N of fifty-two or fifty-four, spuriously high correlations and other forms of error may become more prevalent. As Cattell writes:

Regarding the relation of number of referees, N, to number of relatives, n, a useful rule of thumb has grown up which states that the ratio of persons to tests (occasions to tests, and so on) should not be less than about 2 1/2 to 1 (some favor a 2 to 1 lower bound, others go as high as 5 to 1).¹¹

In an attempt to retain as many of the items as possible, the lower limit of 2 to 1 was used. Fifteen of the forty items on each form were dropped from this analysis dealing with school scores. In selecting items to be dropped, the criteria used was one suggested by Pace. "In general, the larger the sigma the better the item."¹² This is due to the fact that the items which have the larger standard deviations are those which most effectively differentiate among schools.

Two procedures were followed in the elimination of items. A standard deviation of ten points or less was used as a cut off point. Any item with a standard deviation lower than this was dropped from this portion of the analysis. This insured that those items retained for consideration would be items that did indeed differentiate with some effectiveness. The second procedure was to insure that the size of the sample, i.e., fifty-two and fifty-four, was at least twice the size of the items in the instrument. To meet these criteria, fifteen items were dropped. The lowest sigmas used were 11.8 on Form A and 11.2 on Form B.

The continuous scoring procedure used in these analyses was suitable for a product-moment correlation. The intercorrelation matrix of twenty-five items across fifty-two and fifty-four schools, respectively, was the first stage of the analysis, performed by the BMD 03M computer program.

In these analyses, an estimate of communalities was made, and the squared multiple correlation (SMC) was used in the diagonal of the correlation matrix. This figure is derived from the squared multiple correlation between one variable and all remaining variables. The SMC has been

shown to be a lower bound for communality. In addition, it is a definitive estimate of one kind of common variance, the variance that a particular variable has in common with other variables.¹³

The computer was programmed to identify all factors with positive eigenvalues. As a result, thirteen factors emerged on Form A and twelve factors emerged on Form B.

In order to determine the number of factors to rotate, a scree test was employed. The results of the scree test on Form B were clearer than the results of Form A. On Form B the line became straight at six factors. On Form A the line straightened at six factors and then again at nine factors. The eigenvalues are graphically presented, along with their potential cut off point, in Figure 2. As a result of the scree test, six factors were rotated for Form B, and six and nine factors were rotated for Form A.

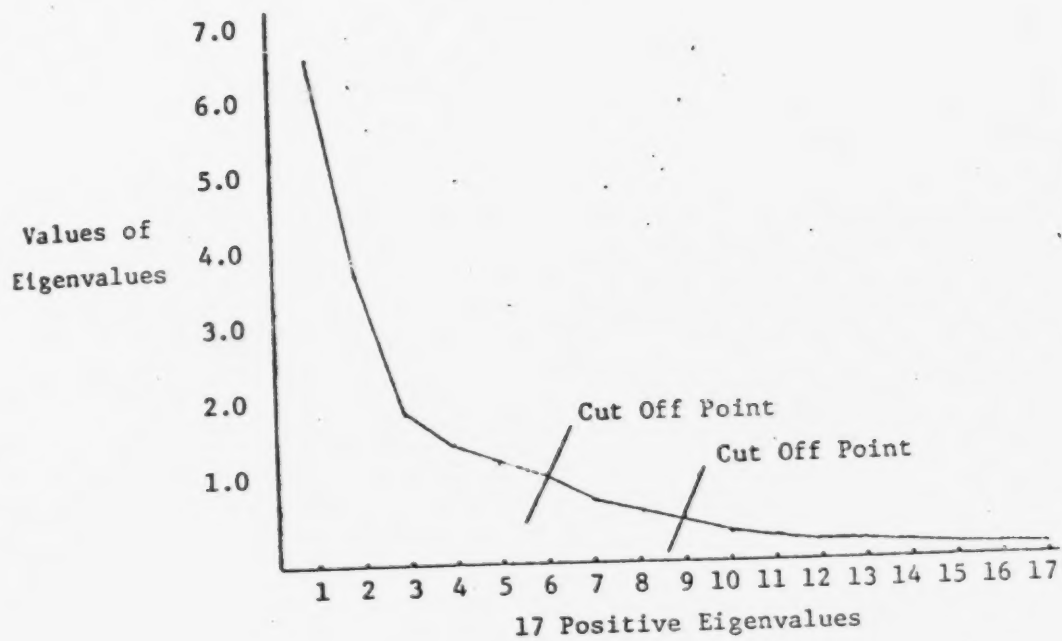
Each of the forms analyzed presented a distinct factor matrix. These matrices were recorded on IBM cards and used as input for the rotation of factors.

The unrotated matrices were transformed into an oblique rotation using the Harris-Kaiser 1964 solution.¹⁴ This technique actually offers two oblique rotations, one based on the primary factor and a second on the independent cluster. Thus, for Form B there were two rotations produced based on six factors. For Form A there were four rotations produced, two based on six factors and two based on nine factors. In each rotation, the simplest structure was sought out. The simplest structure in the pattern matrices is the one in which the items most clearly and cleanly load on a single factor. As Harris and Kaiser wrote, ". . . the ideal pattern . . . is one

FIGURE I

Eigenvalues and Cut Off Points for the Factor Analysis

FORM A



FORM B

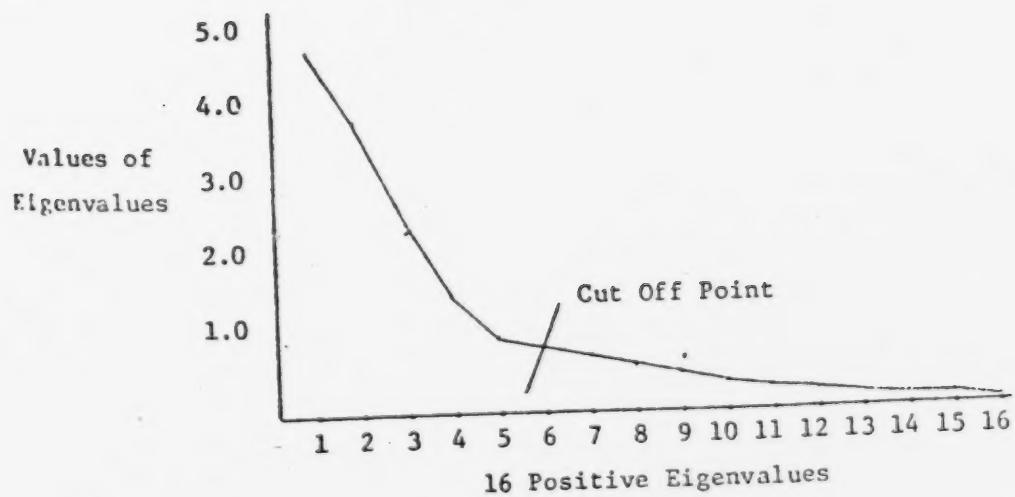


TABLE II
Correlation Matrix of Primary Factors
Form A

Factors	1	2	3	4	5	6	7	8	9
1									
2	.27								
3	.42	.30							
4	-.19	.05	-.77						
5	-.22	.31	-.05	.28					
6	.25	.37	.07	.12	.06				
7	-.10	.21	.26	.36	.35	-.14			
8	-.09	.41	.06	.25	.37	.17	.28		
9	-.12	-.05	.06	.33	.25	-.15	.40	.14	

Correlation Matrix of Primary Factors

Form B

Factors	1	2	3	4	5	6
1						
2	-.14					
3	-.13	.08				
4	-.20	.00	.08			
5	.16	-.04	-.03	-.10		
6	.22	.21	-.07	-.04	.09	

TABLE III
Items Ordered by Factor

Form A

Items	FACTORS								
	I	II	III	IV	V	VI	VII	VIII	IX
10	.26		-.38						
8	.85								
24	.76								
19	.66								
9	-.54								
22		.82							
3		.57	-.50		.51			.36	.33
18		.53							.33
21		.50							
14			.78						
5				.84					
2				.63					
4					.69				
1		.35			.51				
6					.38				
23						.56			
25			.43			-.54			
20	.38					.42			
17							.90		
11							.76		
7					.34		.51		
15								.63	
13			.48				.37	.50	
12									.65
16	.40							-.33	.51

TABLE IV
Items Ordered by Factor
Form B

Items	FACTORS					
	I	II	III	IV	V	VI
6	.88					
4	.79					
21	.68					
7	.58					
25	.49					
12	.49					
9	.46					.37
20		-.78				
22		-.77				
13		-.66				
14	-.31	-.55	-.48			
3		-.42				
5			-.78			
1			-.58			
17			.55			
2	.33		.42			.31
15				-.72		
16				-.68		
8	-.38			.53		
23					.76	
24					.51	
18					.40	
12					.37	
19		-.34			.35	
10						-.81
11						-.78

in which each row contains one and only one nonzero entity; that is, the common part of each variable is of complexity one."¹⁵

The simplest structure pattern matrix in Form B was the primary factor matrix. On Form A it was the nine factor independent cluster matrix.

Naming the Factors

As a result of the analyses, two separate groups of factors emerged. Six factors on Form B and nine factors on Form A were generated.

The items on each of the factors were placed on five by eight index cards. The items with the greatest factor loadings headed each list. Twelve individuals were asked to supply the name or names of each factor. Included among these individuals were one undergraduate student, nine doctoral students in education and two education professors. These individuals had education experience both here and abroad, in private and public schools as well as in education related industry. Most of the judges never taught at all, while one taught for as long as fourteen years.

Their comments fell into two categories. One set of comments included the proposed names of the factors. The second set of responses included definitional elements. This definitional set of responses permitted two or more names of the elements in each factor to be recorded. Individuals who could not find a single rubric for all the questions were encouraged to identify the various elements that they saw within each factor. In this way, as many possible perceptions were solicited. All the responses were examined and used by the investigators to name and define the factors which were retained.

Selection of Factors

In identifying the factors of the revised instrument, two levels of decision-making were used. The first level addressed itself to the problem of identifying which items were to be attributed to the derived factors.

In choosing these items, the following criteria were used:

1. The retained items had a loading of .30 or higher on the factor in which they were classified.
2. The retained items had a higher loading on the factor in which they apparently belong than on any other factor.
3. The retained items were logical and psychologically congruent with the other items on the factor and the factor title.

The second level of decision-making was involved with deciding which factors would be retained on the final instrument. In selecting these factors, the following criteria were used:

1. The factor contained at least three questions with loadings greater than .30.
2. The factor contained a psychological construct as identified by the investigator and the dozen judges.
3. Items on separate forms but with similarly defined constructs were only when necessary combined into a single factor.

With the application of these criteria, nine factors were identified on Forms A and B of the analyses. Three of the factors on Form A and three of the factors on Form B were clearly related by congruent psychological concepts. These six factors were used to relate these three psychological constructs. This created a total of six psychologically distinct factors which exist in the educational environment of elementary schools.

FINDINGS

Dimensions of the Elementary School Environment

As a result of this factor analysis, ESES was revised to reflect six new environmental dimensions. The importance and relationship of these variables to elementary schools are manifest in the following descriptions:

1. Alienation:

Environments which score low on this factor reflect the presence of a student body which feels involved in school affairs. A sense of belonging is emphasized in this environment, and this sense of belonging is buttressed by a concern for students. Students demonstrate their involvement by internalizing school objectives in such areas as academic pursuits and obedience to school rules and regulations. The atmosphere is congenial and there is a cohesiveness and a sense of togetherness in this climate.

A high score on this factor demonstrates a feeling of estrangement in the environment. This feeling of alienation could in fact lead to destructive acts perpetuated against the school itself.

In conclusion, this factor encompasses environmental characteristics such as cohesion, concern and a sense of involvement.

SAMPLE STATEMENTS

Most of the teachers care about problems that students are having.

Most students here care much about their school work.

2. Humanism:

The items in this factor reflect a concern for the value of the individual. It is a supportive climate and is marked by courtesy.

In addition, this value placed on the individual is carried over to his personal acts of expression: aesthetic expression. This climate

demonstrates a concern for man's creativity, and is supportive of his poetry, music, painting and theatre.

A school characterized by this atmosphere is concerned with the integrity of the individual and a respect for his cultural and aesthetic expressions.

SAMPLE STATEMENTS

Most students are not interested in such things as poetry, music or painting.

Many of the teachers will go out of their way to help students.

3. Autonomy:

This factor suggests an environment which supports and encourages student independence. This climate suggests student initiative as well as autonomy. Emphasis on procedures and supervision are stressed. Another aspect of this environment is that the lines of communication are open and candid.

This environment affords the student the opportunity to share in the responsibility for his own learning.

SAMPLE STATEMENTS

Students almost always want to be called on before speaking in class.

Students often work in small groups of about 3 or 4 students without the teachers.

4. Morale:

The questions in this factor relate to student attitude towards the school. A high score on this factor indicates a friendly and cheerful school environment. This environment may be described as a happy one in

which students and teachers have a warm relationship.

A low score on this factor indicates a negative student attitude towards the school, and may suggest poor relations between student and teacher as well as disruptive student behavior.

This factor is concerned with student attitudes toward school, and the cooperating behavior which relates to such attitudes.

SAMPLE STATEMENTS

Many of the students here are unhappy about the school.

The students in this school feel as though they are one big family.

5. Opportunism:

The questions in this factor reflect an environment which is characterized by behavior which adapts to expediency or circumstance. A high score on factor suggests a climate in which one gains social and academic success by knowing how to behave with important and powerful people. Informal procedures and the importance of personal relationships are emphasized.

This environment seems to be categorized by entrepreneurial behavior and political maneuvering.

SAMPLE STATEMENTS

Students that the principal and teachers know will have it easier.

One way to get good grades in the school is to be nice to the teachers.

6. Resource:

The items in this factor reflect the amount of learning resources available to the students. The emphasis here is on the availability of in-class as well as extra-class resources. Included in this category are such resources as written materials, field trips, television, exhibits and music.

The availability or friendliness of the teacher is also included in this dimension. Schools which score high on this factor offer a variety of learning resources to their students.

SAMPLE STATEMENTS

Teachers seldom take their classes to the library so that students can look up information.

Students may take books from the library shelves without the help of the librarian or teacher.

The six dimensions of the environment identified and assessed through ESES provide a fund of useful data about educational programs -- information which can be used to improve schools in a variety of ways. This paper now suggests a procedure for assessing environments and advances some ways that environmental information might be used, keeping in mind that the proposed uses are not at all inclusive.

Uses of ESES

The revised ESES includes the dimensions peculiar to the elementary school. It is a potentially valid and useful instrument which can be used by researchers and school staffs with confidence. However, the validity of ESES cannot yet be fully accepted. Future investigations are necessary in order to verify the six environmental dimensions as well as to determine the reliability of the items within each dimension.

The results of this factor analytic study suggest that environmental constructs in the elementary school can be both identified and assessed. Moreover, these dimensions of the educational environment are identified by

those individuals who are most directly affected by the climate, the boys and girls who live and learn in the school. This study then has identified salient environmental dimensions of the elementary school as seen by children.

The information provided by ESES can be valuable to different audiences for different reasons. Federal, state and private funding agencies can assess the needs of schools not in the gross terms of urban, suburban and rural, but in terms which more specifically identify the nature of individual schools. For example, two urban schools might be funded for identical programs, yet an administration of ESES could reveal that these geographically similar schools are in fact quite different. The first school might have scored low on Humanism. Programs in aesthetics and human relations would be suggested needs here. The second school might have indicated a high score on Humanism, but a low score on another dimension. In the second school, funding should be concentrated on an area other than Humanism. In this manner, ESES can be a useful tool for funding agencies by specifying educational dimensions in need of improvement.

School administrators, curriculum development specialists, and teachers can also use environmental information in the preparation of their programs. For example, a school which indicates a high intensity on the Alienation dimension suggests to a school faculty and administration that changes in this area are needed. School goals could be established and programs implemented with the intent of decreasing the alienation felt by students. Teachers might concentrate on improving their rapport with students. Curriculum specialists could develop materials with the intent of illustrating the importance of people's sense of involvement in their society. Administrators

could create after school programs with the objective of further involving students in their school. ESES cannot only suggest the need for such practical activities but, if re-administered later, it could indicate the degree of success of such activities.

The instrument itself can be used as a vehicle for collecting information to be used in creating educational objectives. Each of the six scales offers an assessment of six dimensions of the elementary school environment. Educators can use this data in constructing institutional objectives. Moreover, an examination of the individual statements would provide similarly useful information in relation to specific school practices and activities, and this information also can be used in creating appropriate and relevant institutional objectives. School staffs would then organize the learning opportunities and programs to achieve these objectives. After these learning opportunities and programs are completed, a re-administration of ESES serves as an assessment. This second administration would indicate the dimensions and activities that have been improved, and those which still need attention. By using ESES in this way, the instrument is helpful to educators by indicating directions and activities for school programs.

This investigation has import not only to educators, but to parents and pupils as well. In a period of educational reform which now emphasizes community involvement and accountability, ESES can provide unique information concerning the nature of elementary schools and the progress that educators are making toward creating appropriate learning environments. Such information can be useful in attaining community involvement. Other than knowledge of

test scores in reading and other academic areas, the public is woefully deficient in data concerning the nature and environment of schools. By offering such specific information, ESES can provide the data by which parents and children can intelligently participate in the selection and creation of school goals and programs. ESES can be a useful tool for professional educators on local and federal levels, as well as for parents and pupils.

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